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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,952	02/09/2004	Qing Ma	884.804US2	8635

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EXAMINER	
DIAZ, JOSE R	
ART UNIT	PAPER NUMBER
2815	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/774,952	MA ET AL.	
	Examiner	Art Unit	
	José R. Díaz	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-13 and 23-33* is/are pending in the application.

4a) Of the above claim(s) *5,7-10,13 and 23-33* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4,6,11 and 12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 20, 2007 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3-4, 11 and 12 remain rejected under 35 U.S.C. 102(e) as being anticipated by Wachtler et al. (US Pat. No. 6,274,391).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 6 remains rejected under 35 U.S.C. 103(a) as being unpatentable over Wachtler et al. (US Pat. No. 6,274,391) in view of Shibamoto et al. (US Pat. No. 6,563,212).

Response to Arguments

6. Applicant's arguments filed March 20, 2007 have been fully considered but they are not persuasive.

Applicant continues arguing that Wachtler et al. fails to teach the recited limitation of "adhering said at least one microelectronic die back surface to said recess bottom surface". In response to this argument, the examiner cited column 8, lines 53-57 of Wachtler et al., which clearly teaches the claimed limitation. For instance, column 8, lines 53-57 states that "[s]emiconductor device 16 is **secured** within cavity 14 of substrate 12 by **adhesive** or other similar means...the die attach material may...be **thermally conductive** or non-conductive..." [Emphasis added]. In an attempt to discredit the cited teaching, applicant further argues that Wachtler et al. teaches away since column 8, lines 18-19 of Wachtler et al. discloses that the semiconductor device (16) is attached directly to the substrate (12) [col. 8, lines 18-19 of Wachtler et al.].

Although it is conceded that Wachtler et al. discloses that the semiconductor device is attached directly to the substrate as argued, it is noted that Wachtler et al., in subsequent paragraphs after the portion cited by applicant, further clarifies that the device is attached by using an adhesive [column 8, lines 53-57].

In addition, it is noted that the Merriam-Webster's Collegiate Dictionary 10th ed. defines the term "attach" as "to make fast as by tying or GLUING" [emphasis added]. In other words, the term "attached" in the portion cited by applicant also implies the use of an adhesive or gluing material. As stated supra, Wachtler clearly discloses that an adhesive or gluing material is formed to secure the semiconductor device (16) within the cavity (14) of substrate (12) [col. 8, lines 54-55 and col. 13, lines 63-65]. Thus, the cited portion does not teach away as argued but also provides support to the fact that an adhesive is formed between the semiconductor device (16) and substrate (12).

With regards to the drawings, it is noted that nowhere in the disclosure Wachtler discloses that the drawings are to scale. The court has held that when the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value. Hockerson-Halberstadt, Inc v. Avia Group Int'l, 222 F.3d 951,956, 55 USPQ2d 1487, 1491 (Fed. Cir. 2000). However, the description of the article pictured can be relied on, in combination with the drawings, for what they would reasonably teach one of ordinary skill in the art. In re Wright, 569 F.2d 1124, 193 USPQ 332 (CCPA 1977). As stated before, Wachtler clearly teaches the use of an adhesive material between the

semiconductor device (16) and substrate (12) [col. 8, lines 54-55 and col. 13, lines 63-65].

Finally, one of ordinary skill in the art recognizes that it is a common practice in the art to not show the adhesive in the figures. For example, Figure 4 in Cheng et al. (US 2003/0134455 A1) discloses a device (210) attached to substrate (208) without showing a space or adhesive formed between each other. However, the fact that the drawings fail to show it does not mean that is not there. For instance, paragraph [0033] of Cheng et al. teaches that a "thermal conductive glue (**not shown**) is smeared onto the bottom of the cavity section 306." Thus, Cheng et al. further supports the examiner's interpretation of Wachtler et al.

Therefore, the drawings in combination with the written specification teach the use of an adhesive material. As such the rejections are considered to be proper.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references teach a glue or adhesive on the back surface of a device attached to a bottom side of a cavity: Cole, Jr et al. (US 5,745,984; 5,434,751; 5,157,589), abstract; Horiuchi et al. (US 5,602,059), abstract; Camenforte et al. (US 6,544,812 B1), abstract; Burdick (US 5,255,431), abstract; and Shibamoto et al. (US 6,563,212 B2).

8. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the

grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to José R. Díaz whose telephone number is (571) 272-1727. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KENNETH PARKER
SUPERVISORY PATENT EXAMINER

José R. Díaz
Examiner
Art Unit 2815